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STATION NOTES
CENTRAL STATES FOREST EXPERIMENT STATION
COLUMBUS 15, OHIO

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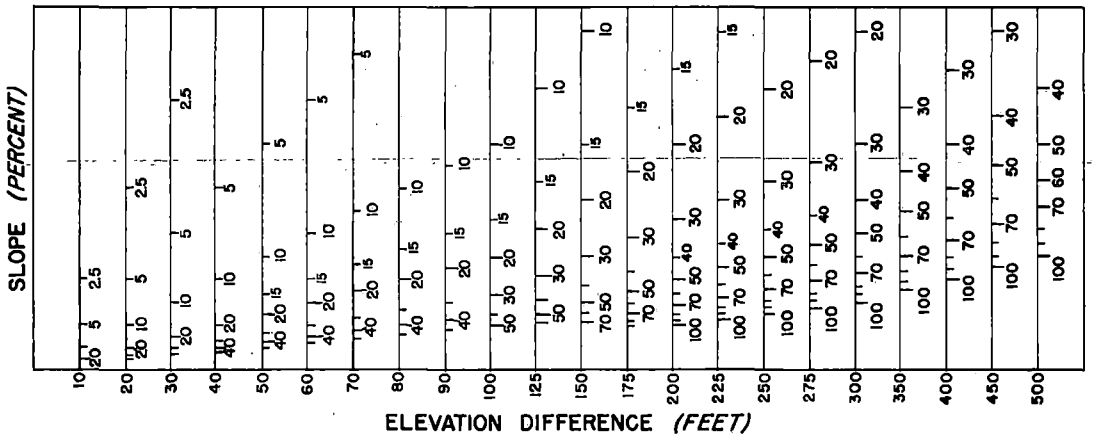
A PERCENT SLOPE SCALE FOR PHOTO INTERPRETERS

Land classification procedures, whether developed by foresters or agronomists, are often based on percent of slope. The widespread use of air photos in land-classification surveys suggests the development of a simple technique for determining slope from them. Specially designed parallax wedges[1/] have been used to measure slope. This wedge and others following its principle can only be used where the slope is at right angles to the photo flight line. Because of this and other limiting factors the technique is of little practical value.

The percent slope scale (see illustration) permits the measurement of slope percent on air photos regardless of the line of flight. This scale consists of several parallel lines, each representing an elevation difference in feet. The scale units on these individual lines show percent of slope rather than feet. For example, on the 100-foot line the figure 50 is located at a point equal to the horizontal distance required to give a 50 percent slope if the elevation difference is 100 feet. For use the scale is printed on film, and for 1:20,000 photos is approximately one-half the size of the illustration below.

PERCENT SLOPE SCALE

CENTRAL STATES FOREST EXPERIMENT STATION



Use--Determine the elevation difference in feet between the upper and lower ends of the slope to be measured. Normally this is

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1/ Spurr, Stephen H., Aerial Photographs in Forestry. 340 pp., illus. New York. 1948. (p. 147)

determined from photos by measurement with the standard parallax wedge or other device. Place the left end of the scale line that corresponds to the measured elevation difference at one end of the slope. At a point opposite the other end of the slope read the percent gradient.

The percent slope scale was tested by measuring 20 slopes distributed through six counties in eastern Kentucky. Slopes varied from 5 to 75 percent. After slope percents had been determined from the air photos, the slopes were measured independently in the field using an Abney level. A statistical analysis of these data indicated that two-thirds of the individual photo measurements made by this technique should be within $\pm$ 14 percent of the field measurement.

Prints of the percent slope scale can be secured through the Engineering Office, U. S. Forest Service, Washington 25, D. C.

Karl E. Moessner, Supervisor
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